framing a development program

Gustav F. Papanek

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FRAMING A DEVELOPMENT PROGRAM

A seasoned observer of the problems of underdeveloped nations recently described the situation in one country in the following terms: "The development program lacks planning... The government is always subject to 'projectitis' – the tendency of the national and international promoters to throw out an anchor for an apparently useful project in some government or semi-autonomous agency. If the project has political value, the Prime Minister's support gives the project top priority.... Private capital is 'mobilized' until a bottleneck, not foreseen by the project promoter, shifts interest to another, still more dramatic project."

This situation has many parallels. Yet one-year plans, five-year plans, "sector" plans proliferate. A country without a plan –at least on paper–is out of step. Never before have so much concentrated thought, attention, and financial resources been devoted to the process of economic development. Is the present state of our knowledge still too fragmentary to permit rational planning, or is the problem one of application?

The present article is directed particularly to those who, in one way or another, have an immediate concern with the techniques of economic development. The author surveys the state of existing knowledge, analyzes the strength and weaknesses of the various criteria and strategies developed so far, and advances his own views as to serviceable criteria. At the present time, he asserts, progress is limited less by the ability to conceive of theories than by the willingness to apply them. This study is a significant contribution to the literature in the field and constitutes a provocative challenge not only to the theoretician but to the practitioner.

GUSTAV F. PAPANEK epitomizes the combination of practitioner and theoretician. At the present time he divides his time between teaching and research at Harvard University and the administration of advisory groups on economic problems to the Pakistan and Iranian governments and a training program for public officials from Asian and Africa countries. He spent two years with the United States foreign aid program and four as advisor to the Pakistan Planning Commission.

ANNE WINSLOW
Editor-in-Chief

March 1960

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Introduction

THE THEORY and practice of determining the composition of development and technical assistance programs have been even less closely related than is usual in the field of economics, where theorists and practitioners have not always been notorious for "togetherness." Criteria applicable in determining the composition of development programs have attracted considerable attention among economists—as evidenced by the works cited in this study[1]—but the planning bodies that exist in many countries have paid this literature little heed and relied on "common sense" and political considerations.

Technical assistance was originally expected to be a technique applicable in all countries to the solution of practically all development problems. Since then, expectations have become more realistic, but the assumption is still widespread that it does not matter too much to what development projects technical assistance is applied. Partly as a result of this attitude, technical assistance programs are often put together by a combination of log-rolling and the intuition of men with experience in the field.

[1] This paper was originally prepared for a conference of United Nations and specialized agency representatives, sponsored by the Carnegie Endowment for International Peace. It was not written primarily for economists; and some attempt has been made to avoid the "jargon" which, although it sometimes seems to make communication easier among economists, always makes it harder for them to be understood by others. In the interest of brevity and of usefulness to program administrators some propositions may have been oversimplified. The author is grateful for the comments of Edward S. Mason, Hanna Papanek, and especially David E. Bell.

The purpose of this study is to examine whether and to what extent criteria have been developed to help guide decisions on the composition of development and technical assistance programs; the extent to which such criteria can actually be used and the difficulties that exist in using them; and how further progress might be made in both respects.

The composition of a technical assistance program depends on the composition of the corresponding development program, just as the priority of a particular technical assistance project depends in large part on the priority of the development project it is to assist. Regardless of the potential effectiveness of a proposed technical assistance project, it will have a low priority or may need to be excluded from a technical assistance program if the development project that it is designed to help is itself of little use or is one that ultimately does not find a place in a country's development program. Determining the composition of a country's development program is therefore the first step in determining the composition of a technical assistance program for that country. It is the first question examined here.

Next will be considered the factors and criteria relevant in determining the composition of a technical assistance program for a country, given the composition of its development program. This is followed by a discussion of criteria that might be applicable in the international allocation of technical and development assistance. Finally, there is a very brief section on the respective roles of recipient countries and donor agencies in determining the composition of both technical assistance and development programs.

This study is concerned primarily with the objectives of developing countries. Some of them—for example, an increase in goods and services available—are shared by the agencies providing technical assistance. But objectives which are confined to the donors, and which may relate to their military, foreign policy, or trade goals, are ignored.[2] Also

[2] See Charles Wolf, Jr., *Aid, Development, and Security in Southern Asia* (Rand Corporation, manuscript to be published 1960), for an interesting attempt to establish criteria for United States objectives in its aid program.

excluded is the administration of technical assistance[3] and the total size and financing of either technical assistance or development programs. This study will confine itself to considering the criteria to be used in determining the composition of technical assistance and development programs, regardless of their size or administration.[4]

No assumption is made about the extent of planning that is desirable and this issue is not discussed, but criteria are considered in terms of whatever part of the development effort is subject to some degree of central planning. In addition, no distinction is made in the study between government and private projects. These can be appraised by the same criteria as long as they are part of a development program subject to planning and control by a coordinating agency concerned with allocating resources.

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[3] See National Planning Association (NPA), Special Policy Committee on Technical Cooperation, Reports on Technical Cooperation in Latin America (Washington): *Administration of Bilateral Technical Cooperation* (January 1956), *Recommendations for the Future* (June 1956), *The Role of Universities in Technical Cooperation* (July 1955), *Technical Cooperation—Sowing the Seeds of Progress* (June 1955), *Organizations of the U.S. Government for Technical Assistance* (May 1955), and *Training Through Technical Cooperation* (February 1957). Also Philip M. Glick, *The Administration of Technical Assistance* (University of Chicago Press, 1957) and Jonathan B. Bingham, *Shirt Sleeve Diplomacy* (New York, Day, 1954).

[4] The term "development program" refers to all the development projects or proposals in a country under some substantial measure of control and planning by a coordinating body concerned with allocating resources. Private investment would be part of a development program if it is subject to control and planning by a government agency. Control need not be direct, but can be exercised by such indirect means as import licensing.

Determining the Composition of a Development Program

TWO GENERAL CONCEPTS are useful in framing a development program: efficiency and consistency.[5] Efficiency means simply that any program should result in maximum progress toward the stated objective or objectives. To put it another way, the development program should exclude no project or proposal which, if substituted for any one already included, would result in greater progress. The concept of consistency specifies that all parts of the program should fit together—resources should match uses, inputs should match outputs, and no scarce resources should be left unused.

The application of these concepts depends on the general long-run objective or purpose of development and on the short-run goals determined by the strategy adopted. If the purpose is to build a war machine and the strategy is to develop the armaments industry, an efficient development program will be quite different from the case where the purpose is to stabilize the political structure and the strategy is to distribute tangible benefits of development as widely as possible geographically. In some cases, these concepts of efficiency and consistency would not be the best direct guides in framing a development program, since more specific and quantifiable criteria exist. But where such criteria are not available, the concepts of efficiency and consistency are particularly useful in appraising the composition of a development program.

[5] See Jan Tinbergen, *The Design of Development* (Baltimore, The Johns Hopkins Press, 1958), and Hollis B. Chenery, "Development Policies and Programmes," *Economic Bulletin for Latin America* (March 1958).

In applying either the concepts of efficiency and consistency or more specific criteria to the composition of a development program, the first step is to decide on the objectives of development. Most countries have a multiplicity of objectives. Almost invariably, however, a major goal is an increase in the goods and services available, with progress toward it measured by changes in the national income.

There are usually other important objectives that will affect economic policy. These may include achieving more equal distribution of income, increasing national power and prestige, increasing employment, improving the foreign exchange position, increasing political support for the government, or decreasing disruption of the culture. Several of these objectives are affected less by the composition of a development program than by other economic policies, and are therefore less relevant to this paper. Income distribution, for instance, usually depends more on tax and subsidy policies. Other objectives, such as improving the foreign-exchange position and maximizing employment, can largely be treated as part of the objective of increasing goods and services. Finally, such objectives as increasing political support or minimizing the disruption of society are rarely considered direct and primary objectives of development, although they may modify the primary economic goals, as in the case of political influence on the location of projects, or of emphasis on cottage industry because it does not disrupt rural life. Political, cultural, prestige, and other objectives may also be regarded as the ultimate goals, with economic growth an intermediate objective valuable largely for its contribution to them.

To set as the primary goal a maximum increase in goods and services as measured by national income not only ignores some other objectives but is subject to several other criticisms. The most powerful of these are: (1) national income does not measure changes in the availability of goods and services with sufficient validity and accuracy; and (2) it is

not possible to establish any clear correspondence between changes in the supply of goods and services and human welfare.[6]

However, measurement difficulties are less important as long as comparisons among countries are not attempted, and most countries are determined to raise their national income even if they recognize that a clear relationship between material wealth and happiness cannot be established. In fact, most underdeveloped countries measure success of development primarily in terms of increases in national income. Thus the rest of this study will assume that the immediate primary objective of development is the greatest increase in goods and services as measured by national income, although some related goals will be taken into account.

The Strategy of Development

Criteria for appraising development proposals depend on the strategy considered best for reaching a stated objective. Priority should go to the proposals that best remove the major obstacles or supply the greatest stimulus to increasing national income. Most prescriptions recognize that development is influenced by a complex of inter-related factors, some acting as obstacles, others as stimulants. Different theories, however, emphasize different aspects.

Three general types of strategies have been suggested in the last few years: (1) emphasis on the need to increase capital or savings, and therefore on a strategy that increases savings; (2) emphasis on the importance of particular human skills and attitudes, and therefore a strategy that produces, trains, or encourages such groups as entrepreneurs, investors, decision-makers, technicians; (3) emphasis on political structure or psychological motivation of the society as a whole, and therefore a strategy that influences values, political attitudes, or particular political groups.

Differences in emphasis often reflect the different backgrounds of authors and the places and time periods from

[6] See Moses Abramovitz *et al.*, *The Allocation of Economic Resources, Essays in Honor of Bernard Francis Haley* (Stanford University Press, 1959).

which they draw their examples. Not only do economists, political scientists, and anthropologists differ in their analysis of the major determinants of development—which might be expected—but among economists there are substantial differences which are not unrelated to the writers' primary concern with, say, Burma or Colombia, India or Pakistan, Indonesia or Libya, Ghana or southern Italy. This may be considered some evidence that development is a complex process and that factors differ in their significance, depending on the place and time period under consideration. Most people would acknowledge that the major factors explaining slow economic growth in Yemen and Indonesia or rapid growth in Puerto Rico and Rhodesia are not the same. It seems plausible that there are similar differences in the importance of various factors making for growth when one looks at less extreme cases.

Since it does not now seem possible to say with any degree of confidence that any one strategy is more widely applicable than the others, the next sections are concerned with criteria that have been developed in relation to each of the three types of strategies mentioned above. It is plausible that different strategies are applicable in different countries.

Strategies Related to Cultural or Political Factors

Although much writing on economic development emphasizes the importance of political organization and stability, the nature and interest of the governing group, the political process, the social structure, the society's attitude toward material wealth, its general values and beliefs, and so on, there has been little consideration of whether these factors are affected by the composition of a development program. Occasionally it has been pointed out that urbanization, industrialization, and advanced techniques are particularly disruptive of cultures, but also induce greater, and possibly desirable, change in motivations, habits and values. But beyond warnings that one must take these effects into account—that the disruption of cultures, especially "primitive" ones, should be minimized—most of this writing has

not provided specific guidelines to action. Furthermore, most of it is concerned with cultural and political factors as modifiers of development strategy, not as the main determinant.[7]

Some recent work stresses psychological and personality factors as a major determinant of economic development. Professor Hirschman, for instance, suggests that in static societies two images of change arise, both of them inimical to development. One is group-focused—that is, individuals think of themselves as advancing only as part of a group—and this, by preventing the outstanding individual from striking out on his own, impedes dynamic patterns of change. The other is ego-focused—the individual thinking of himself as advancing at the expense of others in a stagnant economy—and therefore harms the necessary cooperative component of entrepreneurship. What is needed, and can be acquired only gradually with experience, is a group- *and* ego-focused idea of change, with the individual thinking of himself as advancing at his own speed in a developing economy.[8]

Having made these interesting suggestions, however, Professor Hirschman joins others in framing his proposed development strategy in terms of one crucial group in the society—the decision-makers and entrepreneurs. Thus his strategy belongs properly to the next section.

The conclusion seems inevitable that, if one's strategy calls for influencing general political or cultural factors, no workable criteria have yet been developed for determining the composition of a development program.

There is, however, one particular factor that has frequently resulted in the application of an explicit political criterion

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[7] See Marion J. Levy, Jr., "Some Social Obstacles to 'Capital Formation' in Underdeveloped Areas," in *Capital Formation and Economic Growth* (Princeton, National Bureau of Economic Research, 1955); Bert F. Hoselitz, ed., *The Progress of Underdeveloped Areas* (University of Chicago Press, 1952); William H. Nicholls, "Accommodating Economic Change in Underdeveloped Countries," and Comment by George E. Boutwell, *The American Economic Review*, Vol. XLIX, No. 2 (May 1959); and Everett E. Hagen, "The Allocation of Investment in Underdeveloped Countries: Observations Based on the Experience in Burma," in *Investment Criteria and Economic Growth* (Cambridge, M.I.T. Center for International Studies [CENIS], 1955).

[8] See Albert O. Hirschman, *The Strategy of Economic Development* (New Haven, Yale University Press, 1958).

to the composition of a development program. It is usually considered important to have a wide geographic distribution of development projects, both in order to enlist widespread support for development and to meet some immediate political needs. To give different parts of the country tangible evidence that they have not been forgotten in distributing the benefits of development, projects are included, or are located in particular areas, even if narrow economic considerations would make for different decisions. Regional and local loyalties are strong in many underdeveloped countries, and failure to reckon with them can endanger the existence of some countries and the governments of others. Since personal mobility is often limited, it is necessary to bring projects to people rather than have them go where development is taking place. The location of projects is thus an important and legitimate criterion, although no strategy of development makes it the primary factor. It modifies the priority of projects to various degrees, but does not determine them.

Where criteria are framed in measurable terms, location can similarly be taken into account. For instance, if projects in a development program are supposed to show an annual return of twenty per cent on investment, it is possible to say that projects in the more developed areas will have to show a return of twenty-five percent to be included, while those in a less developed area need only show returns of fifteen per cent. Even in cases where returns cannot easily be measured, it is sometimes possible to use a clear-cut criterion for deciding on the location of projects. In the case of primary education, for instance, the goal can be stated of raising literacy in a less developed area to the same percentage as that in the more developed in ten years, and the number of primary schools to be opened can be calculated accordingly.

Of course, it is not always possible to establish clear-cut and measurable criteria for determining the location of projects, and they will often be ignored even where established; but it is important to do so wherever possible. Location of projects arouses strong emotions, and divisive effects

can sometimes be minimized if criteria are reasonably clear-cut and public. Also, without such criteria it is not possible to indicate the losses involved in providing for desired geographic distribution.

Despite these and other advantages of including location of projects as a stated and measurable criterion in determining the composition of a development program, this has rarely, if ever, been done in practice. Rather, regional distribution is usually adjusted as a result of political and other pressures. Yet this is an aspect of the formulation of development programs of considerable interest to many countries —Indonesia, Pakistan, Brazil, and India, to name just some of the large ones—and an improvement in the economic rationality of development programs could readily be made in this field. The improvement will not be large because the major considerations are likely to be non-quantifiable political pressures, and perhaps this is as it should be; but in some cases even a small improvement is desirable if there are no accompanying losses. Where it is politically necessary, for instance, to establish an industrial plant in a particular area, it is better to select the plant that involves the least economic loss. This can be done if an attempt is made to measure such losses.

Strategies Related to 'Key' Groups

Particular groups in society—technicians, administrators, "the elite," entrepreneurs, and decision-makers—have been as prominent in discussions of the strategy of economic development as have general political and social factors. Recently proposed strategies of development have assigned some of these groups a primary role.

Early post-war discussions emphasized the role of technicians. It was during this period that the term *technical* assistance was coined. What was lacking in underdeveloped countries, it was assumed, were the engineers, the agronomists, the chemists, doctors, and other professionals to create and run the machinery of an industrializing country. To some extent this conviction is still widely held among technicians

and in the underdeveloped countries themselves. That the technicians should regard their role as crucial is understandable. That many in underdeveloped countries share this belief may be due partly to a natural inclination to regard a lack of highly skilled technical training as less humiliating than a lack of the "common sense" ability to manage, to innovate, to lead, and to decide. The need for technicians in an industrial society is also more concrete and understandable than the need for changes in values, patterns of life, and so forth. This emphasis on the role of technicians has diminished with time, as it has become clear that countries can hire and import technical competence almost as readily as machinery so long as there are no political obstacles; that training could, in a relatively short time, produce enough indigenous technicians to meet the most acute shortages; and that development did not respond very noticeably as the number of technicians increased.

Another group that had some vogue as a big factor in development—for obvious reasons, chiefly among the political scientists—was the elite of underdeveloped countries. The attitudes, background, and influence of this group were sometimes considered crucial. The economists in turn tended to favor analyses emphasizing the key importance of the entrepreneurs—their number, motivation, and position in society.

Undoubtedly there is considerable evidence that all of these groups, and perhaps others as well, have a special importance in particular countries. Lately, there have been attempts to pin down more specifically the role of some of these groups, the reasons why they are crucial, and the causes for their behavior.

Everett Hagen stresses the importance of the innovating group, analyzes the personality traits of that group and the conditions under which it develops and becomes important. His work may eventually suggest ways in which this process can be initiated or speeded up, and may make it possible subsequently to derive a strategy of development and criteria for the determination of a development program to assist the

process.[9] At present, however, Professor Hagen's work, while interesting and suggestive, has not reached that stage.

A similar conclusion is inevitable about the work being done by David C. McClelland and others.[10] Professor McClelland has accumulated considerable evidence on the relationship between child-rearing practices, the adult personality, the nature and strength of its motivations and their significance for entrepreneurial behavior, and the rate of economic development. He is beginning to draw some policy conclusions, but again it is too early to determine the impact of these ideas and findings on development strategy.

The only completed recent work in this field that makes specific recommendations on development strategy and criteria is Professor Hirschman's *Strategy of Economic Development*. He argues that the ability to make development decisions is *the* scarce resource that conditions all other scarcities and difficulties. The appropriate strategy for development, therefore, is one that maximizes routine decision-making and induced decision-making. Investment that compels other investment, projects that require decisions on others, would have the highest priority. Thus it is wrong to say that investment should not be concentrated in urban areas, which require more investment than rural areas for housing, water, sewerage, and the like. On the contrary, the very fact that investment in urban areas requires further investment in overhead facilities is one of the strongest arguments in its favor. Professor Hirschman argues for unbalanced growth, a conscious policy of developing some lines faster or earlier than others in order to induce decisions that will in turn develop suppliers and users.

The primary criterion for the selection of a development project, then, is its effect in encouraging other investment.

[9] See Hagen, *op. cit.*, and *The Beginnings of Economic Growth, A Study in the Theory of Social Change* (unpublished manuscript, revised draft, March 1959).

[10] See David C. McClelland, "Some Social Consequences of Achievement Motivation," *Nebraska Symposium on Motivation* (Lincoln, University of Nebraska Press, 1955). A manuscript covering a considerable subsequent development of ideas and data is well advanced, but not yet published.

This depends in the first place on the extent and nature of its purchases from and sales to other producers. For instance, a steel mill purchasing ore, coal, transport, and the like, and selling most of its output to a wide variety of other intermediate producers, will strongly encourage decisions to invest in the development of mining, transport, and the manufacture of steel products. On the other hand, a textile mill buying cotton already produced and previously exported and selling directly to the consumer will be much less effective in stimulating other investment.

Second, one has to consider the qualitative effect of a project on other investments, since it can either permit or actually force other investment decisions to be taken. Social-overhead capital (power and transport, for instance) only *permits* investment in industry or other directly productive activities, and if it is developed ahead of the latter, its decision- or investment-inducement effect may be relatively weak. On the other hand, if directly productive activities are developed ahead of social-overhead capital, the pressures to catch up will be very strong, since plants cannot be run without power or transport and the need will be obvious.

Professor Hirschman also suggests that the selection of development projects take into account their likely efficiency of operation. Here again he implies that the primary scarce factors are decision-makers, in this case the managers, and that it should be made as easy and automatic as possible for them to make the right decisions. He would therefore give priority to projects where the output is assured of rapidly growing demand, since that will create strong pressure to improve performance to meet it; where inefficiency leads to obvious and bad results (not, for example, roads that deteriorate slowly, but airplanes that crash); where there is minimum room for low labor productivity or poor management to assert itself (as where machines set the pace, not the operators).

The degree to which Professor Hirschman's criteria and strategy are appropriate is likely to vary considerably among countries and time periods, and their usefulness as a general

prescription for underdeveloped countries is doubtful. For one thing, while decision-makers are always a scarce commodity, this does not necessarily mean that they are so scarce as to require organizing a development effort primarily to make them go as far as possible. There are undoubtedly differences in this respect between Saudi Arabia and Haiti, on the one hand, and India and Mexico, on the other. Second, there are considerable variations in the number and kind of decision-makers required for a given development effort, depending on its organization. The larger the share of diffused decisions and private decisions, the greater the importance of maximizing routine and induced decisions. If a program is carefully planned by a single government agency and involves primarily the setting up of a few large factories by foreign contractors, Professor Hirschman's strategy has less relevance than if the program is to be carried out primarily by a large number of medium- and small-scale private investors who are expected to develop a wide range of different industries.

More important, if projects are chosen because they induce other decisions rather than because they give the greatest increase in output, Hirschman's strategy involves short-run losses in possible growth. One therefore has to balance the gains that may result from increasing the number of decisions against the losses resulting because these decisions will be less good. The balance will depend very much on the relative scarcity of decision-makers in an economy.

Finally, it is doubtful that there are countries where it would be sensible to "unbalance" the development program purposely, as Professor Hirschman seems to suggest. A government sophisticated enough to plan for inadequate power and transport facilities in order to force decisions to relieve the problem thus created ought to be sophisticated enough to take decisions on these facilities without this artificial pressure, and to take them when needed. Even without conscious effort, development programs are usually sufficiently poorly planned or carried out to result in idle capacity; planning for it in order to force decisions hardly seems necessary.

But even if one questions the widespread applicability of Professor Hirschman's more extreme prescriptions, there are two or three aspects of his strategy that are relevant under most circumstances—the desirability of maximizing the number of routine and induced decisions, the usefulness of development proposals that open up possibilities for and stimulate other proposals, and the possibility that there are some projects with a built-in tendency to encourage efficiency. In most countries these are criteria to be taken into account, even if they are not accepted as primary determinants.

Strategies Related to Savings

The most widely advocated strategy for increasing national income emphasizes the need to increase savings.[11] This is also the strategy on which by far the most work has been done, partly because it is based on reasoning that has an obvious appeal for economists. As a result, some useful and usable concepts and criteria have been developed. There is, however, some confusion and disagreement as to the criteria that follow from the strategy.

The majority view implies that the composition of a development program should be determined primarily by the need to obtain a maximum increase in national income,[12] since this permits a maximum increase in savings. In this

[11] See Arthur Lewis, *The Theory of Economic Growth* (Homewood, Ill., Richard D. Irwin, Inc., 1955). Also, Chenery, *op. cit.*, and: "The Interdependence of Investment Decisions," in Abramovitz, *op. cit.*; "The Application Of Investment Criteria," *The Quarterly Journal of Economics*, Vol. LXVII, No. 1 (February 1953); "The Role of Industrialization in Development Programs," *The American Economic Review* (May 1959); as well as Chenery and Arthur S. Goldberger, "The Use of Models for Development Policy," Paper for the Rio Conference of the International Association for Research in Income and Wealth, June 1959. Also, Tinbergen, *op. cit.*, and "The Relevance of Theoretical Criteria in the Selection of Investment Plans," *Investment Criteria and Economic Growth* (Cambridge, CENIS, 1955). Also Benjamin Higgins, *Economic Development, Problems, Principles, and Policies* (New York, Norton, 1959), and "Discussion: Accommodating Economic Change in Underdeveloped Countries" (William H. Nicholls), in *The American Economic Review* (May 1959).

[12] A more accurate statement would include a consideration of time periods and discount rates, but these and similar refinements have had to be excluded to keep this study within bounds.

view, increased national income depends primarily on increased savings, and savings in turn depend primarily on increased national income. The other view[13] is that savings depend less on growth in national income than on the distribution of that growth, since savings come from those who earn industrial profits, not from those who earn wages or derive income from land. The greater the industrial profits, the greater the savings and subsequent growth in national income: therefore, the most significant criterion for selecting a development program is the maximization of industrial profits.

The latter view has been attacked on a number of grounds. The most persuasive argument goes something like this:[14] If one takes account of taxes and other savings that do not depend on individual voluntary decisions, one cannot say that industrial profits are the only significant source of savings. Savings can be obtained from all parts of the economy. A government is more likely to stay in power if it induces and obtains savings from all those whose income is increasing than if it fosters the great inequality in income implied in a development program that maximizes industrial profits. The critics argue that by increasing national income to the maximum the capacity to save is maximized, and that tax and other policies can be used to assure that this capacity is exploited.

The limited evidence available generally supports the critics. Even in underdeveloped countries savings are not limited to profit-receivers. Few existing governments would be able or willing to sacrifice increases in national income

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[13] See Walter Galenson and Harvey Leibenstein, "Investment Criteria, Productivity, and Economic Development," *The Quarterly Journal of Economics*, Vol. LXIX, No. 3 (August 1955). Also Leibenstein, *Economic Backwardness and Economic Growth*, Chap. 15 (New York, Wiley, 1957).

[14] See Henry T. Oshima, "Review of Economic Growth and the 'Critical Minimum Effect,'" *Economic Development and Cultural Change*, Vol. VII, No. 4 (July 1959); Hans Neisser, "Investment Criteria, Productivity, and Economic Development: Comment," *The Quarterly Journal of Economics*, Vol. LXX, No. 4 (November 1956); and Otto Eckstein, "Investment Criteria for Economic Development and the Theory of International Welfare Economics," *The Quarterly Journal of Economics*, Vol. LXXVI, No. 1 (February 1957).

and foster inequality of income in order to concentrate on projects that maximize savings and industrial profits. Finally, savings in many underdeveloped countries do not depend primarily on voluntary individual decisions that are independent of government policy. One can, therefore, conclude that the strategy of maximizing industrial profits is not universally applicable and may not be applicable in its pure form to any country. But the strategy does underline the importance of taking into account any differences among projects in the proportion of the returns that are saved. If particular projects result in increased taxable exports or in profits which past experience shows are largely reinvested, while other projects imply primarily an increase in consumption, this difference should undoubtedly affect their priority. It is doubtful that there are circumstances in which the savings effects of a project would be the sole, or even the most significant, criterion; but it is another factor that will modify any strategy finally adopted.

Maximizing the increase in national income in order to maximize savings is the most widely accepted strategy for economic development at present. National income is maximized not merely because this is the objective of development, but also because it makes possible still further future increase in national income through increased savings.

The discussion of criteria to maximize increases in national income has been so extensive, and at times so esoteric, that any adequate summary would be too long and involved for a study of this kind. The next few pages will therefore try to cover only the most important highlights, particularly those relevant to practitioners.

Private Profit as a Criterion

Given a strategy that calls for projects to make a maximum direct contribution to national income, any basic economics textbook will show that the criterion of private profitability can achieve that end. It is the criterion naturally used by private enterprise and requires a minimum of difficult as-

sumptions and calculations to apply to government projects. Even in developed economies, however, some imperfections in the functioning of this criterion are recognized. In underdeveloped countries, distortions are often more serious (1) with respect to prices of inputs and products and (2) as a result of greater secondary effects.[15]

The first simply means that the foreign exchange rates, wage rates, interest rates, and land rents used in private profit calculations often do not reflect the value of these factors to society. These current prices are usually affected by tariffs, subsidies, and taxes used by government to achieve objectives unrelated to the direction of private investment. They are often affected even more by traditions, institutions, government regulations, and other non-economic influences. Wage rates, for instance, may be set according to various social and traditional concepts of what is fair, even if the productivity of labor is much higher or lower and a different rate would lead to greater production. Foreign-exchange rates may be kept low for prestige reasons, to reduce the cost of government imports, by inertia or other causes. Investors may then try to use more imported goods than the economy can afford, because to them imports are cheap. In addition, the rates on which private calculations are based reflect current conditions and may not take full account of the very radical changes occurring in a developing economy. By the time a particular investment yields returns, the wage or interest rates on which its private returns were originally calculated may have changed a great deal.[16]

The second point stems from the fact that any project or investment affects other projects or investments. A private profit calculation for one project cannot usually take full account of the effect of other potential public or private investments. (These effects are usually referred to as external

[15] See William Fellner, "Individual Investment Projects in Growing Economies: General Characteristics of the Problem and Comments on the Conference Papers," *Investment Criteria and Economic Growth* (Cambridge, CENIS, 1955); Chenery, "The Role of Industrialization in Development Programs," *loc. cit.*

[16] See Chenery and Goldberger, *op. cit.*

economies and diseconomies.)[17] Since the magnitude of things that will change compared to those that will remain unchanged is greater in an underdeveloped than in a developed economy, the difficulty private investors have in taking account of the investments of others is especially important.

Social Relations as a Criterion

Two approaches have been suggested for taking account of price distortions and the relationships among individual projects or investments.[18] Both take some resources and relationships in the economy as given and try to find that composition of the development program which is most efficient in increasing national income. The first involves a simultaneous consideration of all the relevant factors in an economy in the derivation of a solution. After determining what resources are available, what projects can be carried out using these resources, how the projects are related, and what demands need to be satisfied, this approach uses some of the recently developed mathematically-based techniques to determine simultaneously what prices should be assigned to various resources (for example, wage rates), what types of investment should be undertaken to use the resources, and what results can be expected. Since this approach explicitly takes account of all relationships between different projects and assigns "correct" prices to resources, it takes account of both major questions raised earlier in a very satisfactory fashion and gives a solution that is both efficient and consistent. However, it requires a great deal of factual information about the various magnitudes and relationships. This is, at least at present, not available or not obtainable in sufficient detail to determine the composition of a development program.

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[17] See Svend Laursen, *External Economies in Economic Development* (Cambridge, CENIS, 1955); M. Fleming, "External Economies and the Doctrine of Balanced Growth," *The Economic Journal* (June 1955); Paul N. Rosenstein-Rodan, "Programming in Theory and in Italian Practice," *Investment Criteria and Economic Growth* (Cambridge, CENIS, 1955); Chenery, works cited; and Tibor Scitovsky, "Growth—Balance or Unbalance?," in Abramovitz, *op. cit.*

[18] See Chenery, Tinbergen, works cited.

The alternative is a partial analysis concerned with the costs and benefits of each project or proposal separately, calculating its costs and benefits, but taking into account, as far as possible, its relationship to the development program as a whole. The first step is to estimate the wage, interest, and foreign-exchange rates that would prevail if there were no distortions due to tradition, government regulations, and the like. A guess is then made about the general nature of the development program likely to be carried out and the changes in the rates that will result from the program. The resulting "shadow" rates reflect the future value of various factors to society. They, rather than the actual rates prevailing at the time, are then used to estimate the costs and returns of a particular proposal.

For instance, the current official foreign-exchange rate may in country X be one local unit per dollar. However, a shortage of foreign exchange, import restrictions, a black market, and inadequate foreign exchange to carry out all the development projects that are otherwise feasible, all indicate that the official rate understates the true value of foreign exchange. As a first approximation, country X's development planners might decide to use the free market rate of two local units to one. But if the development program tentatively under consideration is likely to double exports, so that the foreign-exchange shortage should ease quickly, they may instead select a "shadow rate" of 1.75 to 1 with which to appraise the costs and benefits of the different development projects. When all projects have been examined and a tentative development program has been decided on, the shadow rates can be recalculated, if this program differs significantly from that used in the first calculations. It may be found, in terms of the previous example, that a shadow rate of 1.75 to 1 results in such high priority for projects to increase exports that at the end of five years some foreign exchange will be available for development that will not be used. A new shadow rate of 1.5 to 1 might then be tried, and the most doubtful or marginal projects can then be re-examined in the light of the new shadow rates. By a

series of successive approximations, one can approach the same results obtainable by a simultaneous solution—if time and staff are available.[19]

In order to take account of some of the most significant effects of one project on others, these calculations can often be made in terms of a group of closely related projects. For instance, not only can a calculation be made for a steel mill, but it can also take into account the cost of housing and roads, coal and ore development that will be required by the mill, and the costs and returns from a re-rolling mill that will stem from it.

This partial analysis, an attempt to measure "social marginal productivity," comes quite close to being a good guide to allocations of resources or priorities for those parts of the development effort to which it is applicable. It can take account of distortions in market prices by the use of assumed or shadow rates for such items as foreign exchange and wages, although the calculation of these assumed rates will leave something to be desired in the absence of a complete picture of the economy and its planned development.[20] At the same time it can be used to take account of some of the objectives other than an increase in national income that were put aside earlier. One of these was maximum employment. By using an assumed or shadow wage rate that is lower than the actual market rate, more labor will be used and the rate, if set accurately, will maximize employment as well as national income in the long run. The same is true of the objective of solving a foreign-exchange problem.

With this approach it is also possible to take account of the direct contribution to savings of a particular project by showing it as a benefit. A requirement that development in backward areas be accelerated can be accommodated by specifying that projects in those areas will be included in the program at a lower rate of return on investment.

However, both a simultaneous solution and the partial cost-benefit technique discussed above have important limi-

[19] See Chenery, "Development Policies and Programmes," *loc. cit.*
[20] See Chenery, Tinbergen, works cited.

tations. They cannot be applied to some parts of a development program, and they do not take into account all important factors even where they are applicable. This is particularly true of the partial analysis which, it was suggested, is the one that can be used at present.[21]

Where the latter technique does apply, it cannot, by its very nature, take account of all relevant relationships between different aspects of a development program. Thus, while, as mentioned above, one can calculate the direct demand for coal resulting from a planned steel mill, it would be difficult to trace all the effects of the steel project on the need for coal. For instance, the steel project can increase agricultural production by decreasing the cost of machinery, which in turn increases the income of cultivators and may lead them to make greater use of railways, thus increasing the railways' consumption of coal. To trace this kind of intricate third-degree relationship and to frame a suitable program requires a complete picture of the economy, and this is usually not available. It is not always needed, since indirect relationships may be small; but in some cases, indirect effects can be of great importance, and inability to take them into account will lead to some loss in efficiency and consistency.[22]

Furthermore, economic cost-benefit calculations cannot take into account what might broadly be called social effects.[23] Different projects may have different effects on population growth, human motives, values, and institutions, which are not included in cost-benefit calculations. A fertilizer factory and an irrigation project may give the same direct returns, but the former may increase the pace of urbanization and thereby introduce a new outlook on innovations, on improved technology, on hard work, and so forth, whereas the latter may merely serve to maintain the power of the feudal forces in the society. Unfortunately,

[21] See Chenery, "Development Policies and Programmes," *loc. cit.*

[22] *Ibid.*

[23] Cf. Hagen, "The Allocation of Investment in Underdeveloped Countries . . . ," *loc. cit.*

many arguments on the social effects of development projects are based on plausibility rather than fact, and one can therefore question the weight they should be given. There is no *prima facie* reason why a fertilizer project should have a greater effect on a feudal society than an irrigation one. It may affect people more radically, but touch fewer of them. Arguments of the differing social effects of various projects can sometimes be made more convincingly with respect to a particular country, and these would then affect the choice of projects to some extent.

For both these reasons—the difficulty of taking account of indirect economic effects and of social effects—uniform cost-benefit calculations are better for comparing small changes or similar projects than for comparing basically different strategies.[24] If the question is whether to invest in a fertilizer or cement plant in the same location, some of the indirect economic effects and many of the social effects are likely to be similar. But if the comparison is between a strategy of concentrating on building an industrial complex in one area or using the same resources to provide more water, seeds, and fertilizer to agriculture in another, the differences in secondary economic effects and in social effects will be very much larger and the relative economic returns less significant. This does not mean, however, that it is not worthwhile to make uniform cost-benefit calculations where indirect economic and social effects are important in the final decision. At the very least, these calculations will indicate whether there are significant differences in direct economic returns and what sacrifices are made or benefits gained in terms of those returns as the result of decisions that may be made largely on other grounds.

Another limit on these particular techniques as criteria is that they cannot be applied to projects with an output that is not marketed and cannot be measured adequately in money terms. The largest group of such projects are those that contribute directly to human well-being and effective-

[24] See *ibid.*, and Higgins, "Discussion: Accommodating Economic Change . . . ," *loc. cit.*

ness rather than to the production of things.[25] Expenditures on health, education, and, to a large extent, housing are in this category. It is difficult to measure the contribution to development of a better educated or healthier individual, especially in money terms, though in theory it need not always be impossible. In the case of malaria control, for instance, increased production resulting from the elimination of malaria could be considered the output of this project. But the facts for such calculations are rarely available and the assumptions required would be of a kind usually called heroic. It would be even more difficult to measure the productive effects of other projects in these fields—primary education, for instance. Projects that contribute to human well-being and effectiveness usually not only lack a marketed output, but they are also the ones whose non-economic, non-measurable effect is particularly important. Even if malaria control has no direct effect on production, it may be highly desirable because it increases support for the government, helps change values and motives, and increases human well-being.

General criteria are rarely applied, too, in fields like agriculture, transport, small industry, and for some private investment where data on costs and results are often inadequate. Not much need be said about this category. Its size and importance naturally vary from case to case, and, as facts are accumulated, it should decrease with time. At present, however, lack of data for underdeveloped countries is a major factor in our inability to apply general criteria in determining the composition of a development program.

While uniform cost-benefit criteria cannot usually be applied to a large number of projects, the general concept of efficiency or maximum benefit for a given use of resources is often relevant with respect to a particular goal within part of a field.[26] It may not be possible to compare with a single

[25] See Hirschman, *op. cit.*

[26] See David E. Bell, "Allocating Development Resources: Some Observations Based on Pakistan Experience," in *Public Policy*, a yearbook of the Graduate School of Public Administration, Harvard University, 1959.

yardstick the benefits of a malaria control program and of an irrigation project. But if a specific goal of the health program is to benefit the largest number of people in the shortest time, one can compare the relative efficiency of a given expenditure on malaria and the same expenditure on advanced training for doctors. If the goal of the health program is, on the other hand, to assure the best possible health service for the crucial group of technicians and managers, efficiency would dictate a different allocation of resources. Data may be lacking to determine the absolute returns from different agricultural projects, but if it is possible to estimate their relative returns, one can decide which should have priority. Finally, one can look at allocations of resources to particular projects in terms of the losses that will result because these resources cannot be made available to other projects. One can then say that the benefits of malaria control, which can be described but not measured, can be obtained at the sacrifice of returns on an irrigation project, which can be measured and stated. The concept of consistency also remains relevant and is particularly important with respect to some projects contributing to human effectiveness: Development of technical and professional education can very largely be determined by the requirements for technical and professional personnel on other projects. Housing expenditures depend to some extent on the location and personnel requirements of new enterprises.

Separate Appraisal of Projects and Fields

The discussion so far has been largely in terms of determining the composition of a development program, not in terms of appraising the priority of an individual project or field. In practice, however, the composition of a development program often is simply the product of a number of separate decisions on individual development projects or fields. This section examines the dangers of this practice.

In many cases, a decision is first reached on what fields should have priority—agriculture or industry, health or edu-

cation, housing or transport, and so on. Resources are then made available to the ministries or other agencies in charge of each field, with the amount presumably related to the field's priority. Each agency allocates its resources to projects under its jurisdiction, occasionally following an explicit scheme of priorities. But this approach leads to a misallocation of resources because it ignores the fact that the priority of any project or field depends very much on (1) the total size of the development effort, and (2) the composition of the development program as a whole. The allocation of resources to a field depends, in addition, on the projects which compose it.

The size of the development effort is significant because it affects the demand for the goods and services produced by development projects and the cost and availability of the resources they use. For instance, a small development effort in a particular area may increase the area's marketable output and thus make it desirable to build a road connecting the area with its market. A larger development program may make it more economic and efficient to build a railway. Hence, with the smaller program a road would have a high priority, a railroad a low one, while the reverse would be true with a larger program. In another context, a small program may leave foreign exchange unused while a large development effort may make it very scarce. In the first case the priority of projects using foreign exchange would be higher, in the latter, lower, to the extent of their foreign exchange needs. (The composition of the development program in turn affects the resources available for development and therefore the size of the program, but consideration of this circular relationship would take us too far afield.)

The composition as well as the size of the whole development effort also affects individual projects since such projects are related for technical and other reasons. There is, for instance, a close relationship between the priority of a project for building an irrigation dam and that for completing an irrigation system or for teaching farmers how to adjust to irrigated agriculture. One can also see a relation-

ship between a malaria-control program, which increases the rate of population growth, and agricultural development to feed the increasing population or even a project for building food-grain storage to provide adequate reserves for a larger population.

It is not possible to talk of priority for a field in a meaningful way, since a field inevitably includes both low and high priority projects, and the priority of each project in turn depends at least in part on the size of the devolpment effort and the composition of the program in other fields. The statement that "agriculture has higher priority than industry or health" does convey some meaning, but it is of little use as a guide in determining the composition of a development program. "Priority for agriculture" cannot mean that all proposals in that field should be carried out before any other projects.

To say that one field has priority over another is not even a useful criterion for determining which field should be allocated the greater resources, since the resources required again depend on the nature of the development effort in a particular field. For instance, agriculture may be given "the highest priority," but most of the projects to be carried out may require little money, since they involve primarily research, training, and extension, all of which can be expanded only slowly. Industry, with a low priority, might require more funds if the projects to be carried out involve a few large factories, imported as a unit.

In discussions of resource and priority allocation, one often hears calls for "balanced growth." There are many versions of this, but a common definition is that all parts of an economy must grow together in some sense, that no field should get too far ahead of the others or fall too far behind. This balance is hard to define. Does it mean equal percentage growth in output? or equal increase in resources allocated? or simply that different fields should grow at what is considered a "natural" rate?

Sometimes balanced growth is taken to mean that each field should grow at such a rate that its products will find

a ready market as other sectors, including consumer demand, grow.[27] This is at least a definable concept, but the result may be very much more rapid growth in some fields than in others and is not what many advocates of balanced growth have in mind. In practice, "balanced growth" has often been used simply as an argument for allocating resources to sectors and agencies that someone felt were not getting their due. If a health ministry considered its share of resources insufficient compared to that of the agricultural ministry, it could try to bolster a demand for more by appealing to the concept of balanced growth. Allocation of technical assistance resources has sometimes been justified on the same basis. This "balanced growth" argument suffers from the same weakness as the attempt to assign priority to fields, since it is essentially an argument for equal priority, and in addition, in most of its versions, involves the difficulty of formulating a meaningful definition.[28]

The purpose, then, has been to argue that one cannot establish a priority for or allocate resources to individual projects without taking into account the size and composition of the whole development program; and that priority for a particular field has little or no meaning as a guide in allocating resources, since different projects in any field will have different priorities and these in turn depend on the size and composition of the whole program. Given this interdependence, the composition of a development program can best be determined simultaneously with its size, the resources required, and the results produced. A simultaneous solution is often not possible. Even so, the priority of a particular project needs to be appraised in relation to a development program of a particular size and composition.

The interdependence of projects and fields has been stressed here because it is often ignored in practice. Allocations to agencies concerned with particular fields of development are often based on arguments as to the respective priorities of these fields that are by their very nature incon-

[27] See Scitovsky, *loc. cit.*
[28] See Hirschman, *op. cit.*

clusive. Technical assistance and development programs, then, are determined more by the bureaucratic strength of agencies administering them than by the need to make the most efficient use of resources. The outcome is a development program that is neither efficient nor consistent.

Feasibility as a Criterion

There is one other point that needs to be considered before one can turn to the application of criteria for formulating a development program, and that is the use of "feasibility" as a criterion. In technical terms—whether a project can be carried out—feasibility has little meaning. If a project cannot be carried out, then it obviously should not be included in a development program. In any case, there are very few proposals that are technically unfeasible. At a price, even Libya could produce ice cubes for export.

"Feasibility" can be a real and important consideration if it means whether and to what extent the required resources, especially human resources, can be made available to carry out a proposed project. To what extent should a proposal be given lower priority if it is likely to be poorly carried out for lack of managerial and technical competence in the agency that must execute it?

In the long run, feasibility in this sense should not affect priority or allocation of resources. If it does, a development program will soon be seriously distorted. The agencies that are least effective will be starved for resources and will deteriorate further, regardless of the intrinsic importance[29] of their proposals. The ability to plan or carry out projects depends very largely on the availability of scarce manpower —managers, administrators, technicians—and scarcity of such manpower in a particular agency, area, or field should not be used as a determinant of its priority or the allocation of non-human resources. On the contrary, in the long run, the intrinsic priority of the projects should determine the

[29] The intrinsic value of a project is the value it would have if adequate human resources could be assigned to it.

extent to which all scarce resources, including personnel, are made available.

In the short run, this is not always possible. Human beings may be described as a "resource," but they are not homogeneous, they cannot be readily imported, and in most underdeveloped countries they cannot simply be "allocated" to the highest priority uses. Human resources must often be trained for specific jobs or drawn into them by various inducements, and this takes time. Until it can be done, those projects that lack the required personnel will be carried out less effectively; and the allocation of non-human resources has to take this into account, or else there will be considerable waste. Thus, for example, if a fertilizer-plant project is in all other respects as useful as a dam, but will be in the hands of an effective, well-staffed organization, while the agency sponsoring the dam project lacks managers and technicians, the fertilizer plant would be included in a development program and the dam excluded.

To summarize—feasibility, thought of in technical terms, has little meaning since projects are usually technically feasible if resources are allocated to them. In the long run, resources should and can be made available to agencies in relation to the intrinsic priority of their projects. In a shorter period, human resources cannot be allocated, and the "feasibility" of different projects will vary according to the people available to carry them out. These differences will affect the actual costs and benefits of projects and need to be taken into account in assigning priority or allocating resources.

One other problem—often more important in weakening development programs than a plethora of ill-considered projects—should be mentioned. This is the *absence* of enough appropriate projects in some fields. If promising development possibilities have not been adequately investigated and organized into a project, they may be left unexploited. There is, however, little one can say about this problem other than to call attention to the importance of providing resources, human as well as material, that will permit agencies to investigate and to organize promising projects.

After this lengthy discussion of alternative objectives, strategy, and criteria, and of their limits, what can one conclude about their applicability at the present time? Which would yield the greatest immediate return in terms of a more rational development program? A number can be surveyed briefly in the light of the previous discussion:

The two concepts of efficiency and consistency can and should be applied to most aspects of a development effort. In different fields and circumstances their application will differ, but in all cases their application can force a deliberate and specific examination to see if a decision is appropriate in terms of a stated goal. The goal may be increasing political support, but if the question is deliberately raised as to whether a particular proposal is likely to result in the maximum political benefit at minimum cost, the development effort is likely to be more effective than if this question is not specifically considered.

To strive for consistency between the different parts of a development effort is one of the most useful functions that over-all planning agencies can perform. The waste of resources has been large in many countries because parts of the development effort were carried out on a different schedule or on different assumptions from other parts.

In some cases and for some parts of a development program it may not be possible to do much more than make a systematic examination in terms of these two concepts. Usually, however, some or all of the following more specific techniques or criteria can be used.

First, one aspect of efficiency may be determined by the application of a single criterion comparing the costs and benefits of projects. Usually this is possible in such fields as medium- and large-scale industry, irrigation and power development, and to some extent in fields like agriculture and transport. One of the useful cost-benefit criteria is social marginal productivity, but others may also be appropriate in some circumstances.

The results would not determine the inclusion of any particular project in a development program, but they would weigh more or less heavily in the final decision, depending on whether the comparison is between similar projects in the same field or those that differ widely in indirect economic and social effects. Cost-benefit calculations would be of some value for all decisions where they can be made.

Second, the composition of a development effort should be determined by looking at it as a whole, rather than by assigning priorities to projects or fields in isolation. This can be done by using some of the more sophisticated techniques to determine simultaneously the total composition of a development program. In most cases this would require more scarce professional manpower and data than are available. However, the efficiency and consistency of a particular project can still be tested by taking into account its most important relationships to other projects and by considering it within the context of a total development program rather than in isolation.

Third, the most efficient composition of a development program may be determined not only in terms of prevailing prices but also in terms of those that would prevail if the influence of customs, institutions, and regulations were removed from wage rates, interest rates, and foreign exchange rates, and if the expected effects of the development program were taken into account. By an initial rough examination of the likely size and nature of the development effort, the resources available, and the goals set for it, one can estimate the prices or rates for labor, capital (interest), and foreign exchange that will make for more efficient use of resources and a more rapid rate of development. The margin of error will be large, but the exercise can be worthwhile nevertheless.

Once these shadow rates have been calculated, cost-benefit calculations can be made in terms of these rates with little difficulty. Even where no cost-benefit calculations are possible, shadow rates will be useful in judging proposals. If, for instance, the shadow rate for foreign exchange is twice the official rate, projects that require a good deal of foreign

exchange will be relatively less attractive, or less efficient, than projects giving the same results at the same total cost but requiring less foreign exchange.

Fourth, as far as possible, definite criteria can be stated and used in determining the regional allocation of projects, which is quite often decided primarily on non-economic grounds. These decisions can then be made more rational; the resulting losses minimized and weighed against the benefits; and the friction that inevitably accompanies these decisions reduced somewhat. For projects where cost-benefit calculations are possible, a criterion for regional allocation of projects can be framed in terms of the lower rate of returns acceptable in the region to be favored.

A number of additional criteria and strategies have been discussed which in their present state of development do not have such wide applicability. Particular ones may be of special importance in some situations, and most will have *some* relevance in all countries. These include:

1) "Linkage," or the extent to which a particular proposal opens the way for the subsequent development of other projects. This criterion is subject to rough measurement and its application is therefore simple.

2) Direct contribution to future savings. This can be measured only with difficulty, and can be included in cost-benefit calculation or used as a separate criterion.

3) Contribution to political objectives or to increasing the number and strengthening the motivation of entrepreneurs. These criteria are not yet in applicable form, but their importance as well as practicality may soon increase.

Individual countries have sometimes made use of one or more of these criteria. A number of development plans show evidence of considerable concern with efficiency and consistency. The Philippines are reported to have used a variant of the social-marginal-productivity criterion in evaluating a substantial part of their development program.[20] Shadow

[20] See Higgins, works cited.

rates for resources were used to some extent in preparing Pakistan's First Five Year Plan.[31] Undoubtedly there have been other such cases, but the general impression remains that most decisions on the composition of development programs are not based on, or even influenced by, specific and stated general criteria.

There are a number of reasons for this. In the first place, there has been little agreement on the theories or strategies on which criteria are based. This is obvious from even the limited attempt made in the early part of this chapter to discuss and evaluate the various strategies. Practitioners in planning agencies or ministries of finance often do not have the time, the inclination, or the training to examine disagreements and draw their own conclusions.

Many of the theories and strategies relevant for criteria, and often the criteria themselves, have been framed in technical terms, expressed in mathematical form, and discussed on a highly abstract level. They are often difficult for the practitioner to understand and are often not made accessible and known to him. At the same time those who have developed the theories have sometimes not been particularly interested in or experienced in their application.

Where criteria have been used in a particular country or by particular agencies, their experience has rarely been available to others. An agency has had to build up its own experience and make its own errors—a costly, slow process.

Finally, in many countries statistical and other data are so inadequate that any criteria can be used only to a very limited extent.

If the above analysis is correct and there *are* criteria that are usable but have been little used, and if the reasons are as given, major attention in the future should be directed to exploiting theoretical work, which is now considerably in advance of actual application.

Undoubtedly, there is also need for further theoretical work, particularly in order to reach a wider measure of

[31] See Bell, *loc. cit.*

agreement on the best strategy for development under various circumstances. Such work is now going forward and is limited less by the ability to conceive of theories than by the absence of facts to test them.

Even with the present limited development of theory and criteria, one could expect substantial results from their application. This could include: restatement of criteria in terms understandable to and directly applicable by practitioners, perhaps in the form of a manual; exchange of experience among practitioners and theorists about the difficulties and successes in past application of criteria; and technical assistance to planning agencies and others concerned with applying criteria. In addition, it is of course necessary to generate and collect more of the data necessary for sensible decisions.

Attempts to acquaint government officials with more theoretical work and to arrange for some exchange of views will be of substantial immediate value only if the officials involved are really "practitioners." If they are well-trained junior economists, already acquainted with most of the theoretical work but not in a position to apply it and not acquainted with actual decision-making in their government, the gain may be quite small. This is also the case where officials come from an agency that has little or no influence on government decisions. Of course, the official who has little influence and is not concerned with actual decisions is also the one most easily spared for conferences, workshops, and similar get-togethers and is most accessible to the economist. This may partly explain the limited use of some theoretical work in the preparation of development programs, but it does not diminish the potential usefulness of an improvement in this respect.

To improve the composition of development programs can give substantial returns, at modest cost, in the better use of resources. The available criteria are really quite limited; but if even limited tools are available and not used, then help in their application is an aspect of development where technical assistance could be particularly useful.

Composition of a Technical Assistance Program

IT IS UNNECESSARY to repeat that the priority of a development project is an important factor in the usefulness of the corresponding technical assistance project. The relationship between the two is particularly complex, however, when a development program has been poorly or haphazardly chosen or when there is a difference in the priority of a development project and the corresponding technical assistance project.

There is no need to consider the first of these problems in any detail. To meet it, an outside agency can either help to improve the development program or it can react by modifying its assistance program. Both steps are considered later in this study.

There are, inevitably, many cases where the second question arises. Extreme cases present no serious problems. If a development project is useless, a technical assistance project, even if itself sound, is of little value. In the opposite case, it is also clear that a development project of the highest priority will not be helped much by technical assistance if the latter is not a suitable technique. For instance, a project to improve fishing nets in Ceylon may have high priority, but may require only the supply of nylon twine. Most cases, however, are not so clear-cut. If malaria control has high priority and would be helped by technical assistance, while a less important cement plant would benefit very greatly from technical assistance, which of the two technical assistance projects should have priority? It does not seem possible to assign weights to express the relative importance of the priority of a development project and the usefulness of the corresponding technical assistance project. All one can say is that both need to be taken into account. Perhaps they should be considered about equally important, but certainly neither alone is significant. The rest of this section is concerned only

with the usefulness of technical assistance projects, since the previous chapter has already dealt with the priority of development projects.

Pressure and Participation as Criteria of Usefulness

In practice, governments and aid-giving agencies have often gone on the assumption that a good index to the usefulness of a technical assistance project is the receivers' interest and willingness to share its cost. It seems plausible that if a sponsoring body or country expects a technical assistance project to be particularly useful it will push harder for it and be willing to contribute to a greater extent. If its usefulness is sufficiently great, the country or body will presumably be willing to arrange and pay for the required technical competence without assistance from an outside agency.

The weakness of this criterion is similar to that of feasibility in appraising a development project—interest and participation, as well as feasibility, are related more to the strength and ability of the agencies carrying out a project than to its intrinsic importance. If interest and participation demonstrate usefulness, the bodies and countries already best supplied with personnel to plan projects, with managers to push them, and with funds to carry them out will be in the best position to demonstrate the "usefulness" of their projects, just as they are best able to show their feasibility. Their relative performance will improve further as they obtain more than their share of technical assistance, and gradually those best off will draw further ahead of those somewhat less well off.

Naturally, if a government or sponsoring body is not willing to share any costs and is not sufficiently interested to provide the minimum support necessary for the operation of any technical assistance project, it is not worth going into. Beyond the minimum level, support will vary, but in the long run this should not affect the priority of such a project. An assistance project has an intrinsic value, determined by the priority of the corresponding development project and

the usefulness of the technical assistance technique. In the long run, bodies and countries can and should be strengthened so that they can provide the necessary support to useful technical assistance projects. This takes time, however, and in the short run the support provided for different projects helps determine their effectiveness and is a factor in their usefulness and priority.

Two factors influencing the value or priority of a technical assistance project have been mentioned—the priority of the development project being assisted and, in the short run, the support provided. Three more are discussed below—the type of project, its benefits, and its costs.

Types of Technical Assistance

There are three major types of technical assistance—assistance in carrying out an operation, in training or teaching, and in institution-building. These are not clear-cut, separate categories and many projects combine all aspects in various proportions, but they do have some usefulness in distinguishing major purposes.

Assistance in operation means that the technician's primary assignment is to substitute for an indigenous technician in the direct performance of some function. This may involve a foreign engineer building a dam or constructing a factory, a foreign doctor treating the sick, or a foreign extension agent who tries to introduce new agricultural techniques. He may be training subordinates or cultivators, but he is not training a replacement. The same is true of the foreign economist who serves a planning agency or the foreign specialist who is engaged in the widespread, and widely deplored, activity of preparing a report. In most cases there is an incidental training function—almost no one works in isolation, and something will rub off—but in all the instances cited the major purpose is not the training of a local technician to replace the foreigner.

Teaching or training means that the major purpose of technical assistance is to enable one or more individuals to do work previously done, or undone, by a foreigner. This

was the major purpose of technical assistance as originally envisaged, and decriptions of most current technical assistance projects still emphasize this aspect. It involves the transfer of knowledge, of techniques, to individuals or groups, but without major concern with the organizations or institutions that are to use the newly trained individuals. Foreign training for persons from underdeveloped countries falls in this category, as well as such projects as the foreign technician assigned to train engineers in dam-building practices or malaria experts in spraying campaigns.

Institution-building adds to the training function the requirement that some organization be assisted. For instance, foreign technicians would not only help train engineers to build dams but would help and advise on how to establish a dam-building organization eventually capable of doing the whole job by itself.

Recently, there has been a great deal of emphasis on the importance of institution-building.[32] The impression left by some writing is that the usefulness of a technical assistance project is practically always greatest when it is designed to assist in building an institution, less when it helps to train, and least when its major objective is to help carry out an operation. This is an over-simplified and therefore often inaccurate conclusion. Each of the three types of technical assistance is useful if it is the appropriate one for dealing with the problem to which it is applied. For instance, if a country is building a fertilizer factory, plans to build no others in the foreseeable future, and has the people to do everything except buy equipment, a technical assistance project to help with this is very sensible even though no training or institution-building is involved. On the other hand, if the problem is to establish an agricultural extension service, a project limited to providing or training extension agents is not likely to be successful.

The first check—criterion might be too strong a word—on the usefulness of technical assistance would then be to see

[32] See Glick, Bingham, NPA, works cited.

whether the type proposed is the type needed. One can to some extent determine the type of technical assistance required in relation to the number of times for which a particular skill, action, or activity is needed. For instance, if a country has a site for only one high dam, it is sensible to provide outside engineers to do the actual work on aspects that are unique to high-dam construction. It would not be efficient to train native engineers in these special techniques since there would be no further use for their training. However, if several high dams are to be built, or where aspects of construction will be duplicated on some other dams, it will be better to provide technical assistance whose major purpose is to train engineers rather than to do the actual construction. Finally, if a number of dams are to be built, the country will need an organization, not just some trained engineers who can be brought together anew for each piece of construction. Technical assistance in that case would mean not only helping to train individual engineers, but also assisting where necessary in providing an appropriate internal structure for the organization and appropriate relationships to other organizations, delimiting its functions and shape, and framing its policies and operating procedures. Some training would still be involved, perhaps even some direct operation by foreigners, but the major emphasis would be on helping with management and policy problems of establishing an institution.

Benefits of Technical Assistance

The benefits of technical assistance can be measured in terms of the estimated losses that would result from its absence. Without technical assistance a development project may cost more, its returns may be less, or—what comes to the same thing—it may take longer to execute. It may not be possible to make precise quantitative estimates of these losses, but their magnitude is the relevant measure of the benefits of a technical assistance project. For instance, without technical assistance a dam might be built equally well but take

three years longer to complete. The benefits of technical assistance then are given by the returns forgone for three years. Just as there are development projects whose benefits cannot be quantified, a large number of technical assistance projects have benefits that are not readily measurable. Nevertheless, the same concept applies to them. The benefits of a technical assistance project to help set up an agricultural extension service are given by the greater effectiveness of that service, even it it is not possible to express them in quantitative terms.

In addition, technical assistance can have some indirect benefits that are hard to measure. It can foster a general atmosphere of change, help to increase receptivity to new ideas, foster improved personnel procedures, and encourage a number of similar changes outside the confines of the particular development project it is to assist. These benefits may differ among projects, and, if significant, should be taken into account even though they cannot be quantified. Such differences may arise from the nature of the project itself or from differences in the persons available to staff them. For instance, a project to supply a grouting engineer is less likely to have indirect benefits (or costs) than one to provide an advisor on extension methods to a community development project.

Considered broadly, opinions about the benefits of technical assistance depend very much on one's view of the strategy of economic development. Those who consider inadequate savings the main obstacle to development regard technical assistance as an occasionally useful, but minor, aspect of the development process. On the other hand, those who regard the absence of technical competence as the significant obstacle view technical assistance as the most important technique for assisting underdeveloped countries.

Different views on development strategy affect not only the appraisal of the over-all importance of technical assistance but—what is more to the point here—the conception of the *type* that is most useful. Those who see development mainly as a problem in transferring knowledge, skills, and

techniques would stress technical assistance projects that provide for either direct operations or training. It is usually argued, however, that of the two, technical assistance for direct operations is much less valuable or needed. In this type, the foreign technician can, and often does, have little contact with indigenous institutions and therefore has little impact on their operation. The history of technical assistance is full of stories, which have by now become almost traditional and are often told with relish to outsiders, of reports written but ignored, functions performed only as long as the foreign technician was available, and other examples of the failure of projects emphasizing direct operations by the foreigner.

Teaching and training, it is maintained, fill a more important need in development since they permit the foreign technician to multiply his effectiveness by training several persons, each one better able than a foreigner to function in the particular environment of his own country. However, there are other limits to the effectiveness of training projects. What is normally transferred are knowledge, techniques, and facts. But in many cases lack of knowledge is not the major obstacle. Stagnant agricultural production may not be due primarily to a lack of knowledge among technicians about fertilizers or improved seeds or the importance of credit, or even to lack of knowledge about techniques for distributing fertilizer or seeds or credit. What is more often missing, cultural factors aside, are the institutions or organizations to demonstrate to cultivators the benefits of and techniques for using fertilizer and seeds and to provide the necessary credit. Technicians from underdeveloped areas trained in developed countries at great expense often find on their return that there is no organization to use their training. Equally frequently, "counterparts" to foreign technicians find they cannot put their training or experience to use once the foreigner leaves, because there is no organization to use it and as individuals they have neither the prestige nor the ability to create their own organization. From these difficulties and disappointments stems the argument that the

greatest benefits come from technical assistance in institution-building.

Three types of technical assistance were described early in this chapter, and it was concluded that one could not assign priorities by type, since operations, teaching, or institution-building could all be equally useful if they were appropriate to meet a particular problem. Here these three types have again been examined, but this time to see whether in general one type is likely to be more useful. One can conclude that assistance in institution-building meets the most urgent need of many development programs, and direct operation the least urgent. This does not determine the priority of individual technical assistance projects, which depends on their particular benefits, but it does provide a useful indication of broad differences.

Costs of Technical Assistance

So far the discussion has been concerned with the benefits of technical assistance. But technical assistance also has some costs, which naturally affect the priority of a given project.

Some costs are rather simple to measure. One can estimate the money costs of a technical assistance project and the number of people and amount of equipment likely to be needed. In addition, there are political and social costs. There is usually at least some resentment because outsiders have to be brought in, especially when they have privileges and remunerations much above those available to the indigenous technician or manager. Furthermore, the work of the foreign technician often results in making enemies as well as friends, since few recommendations or actions in economic development are not considered harmful by someone. These political and social liabilities vary from one technical assistance project to another.

There are other more direct costs to a development program. To some extent foreign technicians will do work that, if done by a native of the country, would have provided him with valuable experience. The local official may learn how to avoid some mistakes from the foreigner, but in at least

some cases he would have learned more had he made the mistakes. Secondly, the foreigner inevitably makes some mistakes that the indigenous inhabitant might have avoided. Then, technical assistance sometimes serves as an excuse for postponing a decision or shifting the responsibility for it. Finally, a technical assistance program requires substantial efforts on the part of the recipient countries in negotiating agreements and providing administrative support and technical counterparts, and often calls for substantial attention from top government officials. Some of these efforts may be expended on projects because they are attractive to the outside agency, even if they are not accorded a high priority by the country. The result may be a dispersion of the country's effort on some marginal projects. The reduction in the opportunities to learn from doing, the possibility of postponing or shifting decisions, the mistakes of the foreigner, and the additional effort required from the recipient country are costs of technical assistance that are often overlooked.

The extent of some of these costs depends to a considerable degree on the suitability of the foreign technician involved in a particular project. His ability will in part determine whether they are significant or not. There has been much discussion of the need for flexibility and adaptability as well as competence on the part of technicians. Not much would be gained by trying to summarize work on personnel selection here, since this is a large field in itself with a considerable literature, much of it of some significance to the selection of technical assistance personnel.[33]

All of the costs—financial, social, political, and broadly economic—vary from project to project and these differences

[33] See *The American Overseas*, Hearing Before the Committee on Foreign Relations, United States Senate, 86th Cong., 1st Sess., February 18, 1959 (Washington, G.P.O., 1959); Harlan Cleveland and Gerard Mangone, eds., *The Art of Overseasmanship* (Syracuse University Press, 1957); Clarence E. Thurber, "Training Americans for Overseas Service in the U.S. Government Technical Assistance Programs," Doctoral dissertation in public administration, Stanford University (unpublished manuscript); Group for the Advancement of Psychiatry, *Working Abroad: A Discussion of Psychological Attitudes and Adaptation in New Situations*, Report No. 41 (New York, 1958); and U.S. Civil Service Commission, Examining and Placement Division, *Research Project on Selection Methods for Overseas Employees* (August 1953).

need to be taken into account in determining the priority of individual technical assistance projects, although they will often be difficult to estimate. Costs are also likely to vary among types of technical assistance projects. For instance, if a project involves a highly specialized technical task which clearly cannot be performed by an indigenous technician, and if it is to be carried out under the general supervision of a local official, non-monetary costs may be quite small. At the other end of the scale is the foreigner advising on a highly sensitive issue, such as the desirability of a steel plant or of land reform, or one brought in to replace a civil servant who is considered inefficient.

In general, a technical assistance project calling for operation by the foreigner and a narrow technical task is often the simplest and easiest to carry out successfully. When a grouting engineer is needed, it is simple to supply one, to have him check the dam site, make his recommendations, or even carry them out. His work is clearly defined and limited in time. He is likely to be effective, successful, and make few mistakes, regardless of the country where the dam is located, and its culture, history, or politics.

Where the major purpose is training or teaching rather than operation, technical assistance becomes more difficult and is more likely to result in costly failure, since it requires more attention to the background and motives of those taught or trained.

Assistance with institution-building is usually the most difficult. It requires not only a knowledge of and ability to deal with individuals but also an understanding of institutions and an ability to assist in changing them. To help build a credit system, for instance, is a very complex task, involving some knowledge of the particular country's land tenure, of cultivators' habits, past experience, motives and methods of operation, of politics and government administration, and a host of other factors. In addition, it requires the ability to help adapt techniques to new circumstances and a number of crucial personal characteristics. The foreign technician is most likely to make mistakes, to offend, and in general to

encounter difficulties in this type of assignment. Institution-building is also the type of technical assistance that usually takes longest to achieve any measure of success and where continuity in personnel is most important. Otherwise, its costs are likely to increase sharply and its benefits decrease greatly.

In short, the difficulties, risks, and costs of technical assistance are usually least for simple operational assignments, greater in teaching or training projects, and greatest for those primarily involving institution-building. This is certainly one of the major reasons for the number of projects emphasizing direct operations and quite restricted problems, despite the nearly universal agreement on the limited usefulness of this type of assistance.

Future Work

Unfortunately, little seems to have been done to evaluate the applicability of technical assistance to different development projects.[34] For instance, although it was mentioned earlier that assistance in institution-building has been considered a major function of technical assistance, there seems to be no systematic analysis of whether technical assistance is an appropriate technique for facilitating this process. Under what circumstances, if any, is technical assistance effective in helping to establish an agricultural credit system or a planning agency, an extension service or a changed system of education? It may be that in many cases cultural differences are so significant that most available foreigners can make little contribution to institution-building. The development of an agricultural extension service may be a crucial need in a particular country, but little is known about the effectiveness of foreign extension agents in helping with this problem and about the circumstances that influence their effectiveness. A related question is the applicability of any type of technical assistance in situations where a significant

[34] But see Glick, Bingham, NPA, works cited; and "Foreign Technical Assistance in Economic Development in a Newly Independent Country," *Economic Development and Cultural Change*, Vol. I. No. 1. (March 1952).

change in people's attitudes or values is involved. Is it worthwhile, for instance, to provide technical assistance in the field of nutrition, or do changes in this field involve such deeply held attitudes that a foreign nutritionist will accomplish little? If the technical assistance technique is usually not applicable to this type of problem, a project in this field, however good, may have low priority.

Sociology, anthropology, and related disciplines have been concerned with the problems arising from the impact of people from one culture or society on another.[35] Unfortunately, little of their work seems to provide specific guidance in deciding on the applicability of technical assistance under different circumstances. Where recommendations are made for the practitioner they are often confined to warnings that he should realize (1) that particular techniques will work differently in different cultures, and (2) that any change, even if it seems a small and simple technical innovation, can have far-reaching consequences difficult to foresee. It is certainly important to keep these warnings in mind, but they do not help much in determining the circumstances under which, and the projects for which, technical assistance is appropriate.

What is needed here is more research, more work on the development of criteria. A great deal of actual experience has been accumulated and could be analyzed to find out when and why particular technical assistance projects have been successful and others not. These studies would not be concerned with the question of how technical assistance should be administered, but with the kind of development project that can most effectively use it; with the circumstances that are relevant and the reasons for success or failure; with the type of technical assistance most useful to meet different problems; and with the kind of person most effective in providing different types of technical assistance. Some improvement in the composition of technical assistance programs would result if the experiences and knowledge of

[35] See Hoselitz, Levy, works cited.

practitioners were exchanged. The major need, however, is for a systematic study, drawing on experience in different parts of the world, under different circumstances, and with different approaches to technical assistance.[36]

Conclusions

The criteria and general guidelines that are available to assist in deciding on the composition of a technical assistance program are not very satisfactory, but some general propositions can be stated. To summarize briefly and without the necessary qualifications:

First, the priority of a technical assistance project depends on two major factors—the priority of the development project being assisted and the usefulness of technical assistance in carrying out that development project. Both are important and might normally be given equal weight.

Second, the interest and willingness to share the cost shown by a sponsoring body is not a good indication of usefulness since they depend largely on the strength of the body. Used as criteria, they will reinforce the bodies and countries already best off. In the long run, technical assistance should be provided on the basis of the intrinsic usefulness of projects, and agencies should be strengthened so they can carry their share. However, in the short run, the effectiveness of technical assistance is inevitably affected by differences in the interest and support of sponsoring agencies, and this needs to be taken into account in evaluating the costs and benefits of a project.

Third, the benefits of technical assistance can be measured by the losses in terms of costs, benefits, and time that would be incurred on the corresponding development project in the absence of technical assistance. A good, accurate estimate will usually not be possible.

Fourth, costs of technical assistance are not only financial, but also social, political, and broadly economic. They include

[36] The United States International Cooperation Administration is considering such a study of its own technical assistance program. It could go far in meeting the need described above.

the effort and attention required from the recipient country, which may be a significant element. Differences in cost depend on the nature of the project, the availability of suitable personnel, and other factors.

And fifth, three types of technical assistance projects can be distinguished—assisting in operations, in teaching and training, and in institution-building. In general, the benefits are greatest for projects that aid in the creation of new institutions and organizations, while assistance in direct operations is least effective in meeting the problems of development. At the same time, assisting in operations involves the least danger of failure and of great political, social, and economic costs, while institution-building is the most difficult and calls for foreign personnel with particular personal characteristics as well as technical competences. Thus, the type of project with the greatest benefit may also be the one where costs and danger of failure are greatest. These general statements on the benefits and costs of different types do not, however, indicate the priority of a particular project. A technical assistance project in any category can and should have a high priority if that type of project is the appropriate one for meeting a particular problem. Failures arise when the problem calls for one type but another is supplied.

If all the variables above were measurable, one would be able to conceive of technical assistance projects being evaluated by giving equal weight to the priority of the corresponding development project and the usefulness of the technical assistance project itself—the latter being decided by weighing its benefits against its cost, subject to some correction for the extent of support by the sponsoring body.

A possible framework of concepts and criteria for determining the composition of a technical assistance program has been developed here, but the major conclusion that has emerged is the inadequate state of knowledge in this field, the need for further research, analysis of experience, and development of criteria before much progress can be made in their application.

Criteria for International Programs

So far the discussion has been in national terms—what criteria can be applied in determining the composition of development and technical assistance programs in one country. Various aid-giving agencies, and sometimes recipient countries as well, face the problem of how to allocate resources for programs covering more than one country. It is difficult enough to apply criteria to one country, but even harder to decide on the relative size of assistance to a number of countries—to decide, for instance, whether to reduce technical or capital assistance to India in order to increase that for West Africa, or whether to drop assistance to a railroad in Brazil in order to help mineral exploration in Burma.

Some Relevant Considerations

Decisions in this field, particularly as far as bilateral programs are concerned, are made to a considerable extent on the basis of the political, economic, military, or moral interests of the donor, but these have previously been excluded from examination and, though important, will not be considered here.

Ignoring these aspects, there are at least three considerations that could influence the relative size of assistance, both technical and capital, for different countries:

1) Their relative need for assistance: Presumably the greater the need, the greater should be outside help.

2) The extent of each country's own effort with respect to development: Presumably outside assistance should not substitute for, but encourage, a country's own effort.

3) Their relative ability to use the assistance: If it is in the interest of both outside agencies and underdeveloped

countries to use scarce resources efficiently, outside resources should go in larger amounts to those able to use them more efficiently.

A number of simple criteria have been used in practice to compare and evaluate the desirable extent of outside assistance to different countries. These include size of population and national income, amount of assistance provided in the past, and size of a country's own effort. When measured against the considerations discussed above, one can see both the advantages and shortcomings of such yardsticks.

The major advantage is their simplicity and measurability. The criterion of assistance per capita is easy to apply, and such a comparison does have some meaning. It ignores, however, the relative ability to use assistance and the relative effort of different countries, as well as all factors of need other than numbers of people. There would probably be little disagreement with the proposition that India's much larger population is likely to need, be able to use, and contribute to more aid than Nepal, but this does not help in deciding whether both should get the same amounts per capita, or how resource-rich Iran and resource-poor Jordan should be treated.

A country's national income does indicate to some extent its ability to use assistance—the greater the size of the economy, the more likely it will be able to absorb aid effectively—but it is not a very good indicator even of this and is a poor indicator of a country's need or own effort. Outside aid related to the national income of Kuwait, Saudi Arabia, Sudan, and Libya would help those who need it least.

Relating allocation of outside resources to a country's own development effort largely ignores differences in need and ability to use assistance. Again the resource-rich countries, especially if their resources are in an easily exploitable form (for example, exports), can have a higher rate of development with less need for outside help. It is also possible that they are already exploiting the best opportunities for development, so that outside assistance yields lower returns than in other countries with a smaller development effort.

Finally, there is the possibility of allocating outside assistance on the basis of historical patterns. The soundness of this criterion obviously depends on the soundness with which allocations were made originally and the extent to which circumstances have changed. Historical patterns are often accidental; situations change and the fact that a country needed, or was able to use, or for other reasons obtained assistance of a certain amount in the past soon becomes a very poor indication of its need or ability to use it in the present.

That these various simple criteria for the allocation of outside assistance have serious defects should be obvious. Yet they do possess some usefulness, and in the absence of anything better they have been used. The question is whether some more satisfactory guidelines can be suggested. The next section examines this question with respect to each of the three considerations previously suggested as relevant.

Possible Guidelines

The need for outside assistance depends on the rate of development considered desirable and the extent to which a country can reach that rate using its own resources.

A desirable rate of development can be established in several ways. It can be related to an absolute goal (for example, underdeveloped countries need to be helped until they have a per-capita income equivalent to $200); or to a rate of growth considered desirable (for example, underdeveloped countries should increase their national income by 3 per cent a year); or to different goals for different countries (for example, each country should be helped to meet the goals it set for itself). The measure chosen makes a great deal of difference to one's conclusion about the relative need of different countries. If need is measured in terms of an absolute goal, countries with low per-capita income like Burma, India, Pakistan, and Uganda would top the list; if measured in terms of desirable rates of growth, a number of countries showing little growth (Ceylon, Chile, and Indonesia) would

rank ahead of them; and if measured in terms of each country's aspirations, one would get yet another picture. In the last case one also faces the problem that the desire of most countries for development is practically limitless, and if outside assistance is known to be based on stated aspirations countries may progressively inflate their goals in order to increase outside help. (This is probably already happening to some extent.)

No single universal measure of a desirable rate of development exists, and the most appropriate one will depend on what an agency is trying to achieve. One can argue, however, that it is usually best defined in terms of a desirable rate of increase in per-capita income which is similar for all countries. This can mean, for instance, that in all countries per-capita income should increase by a significant percentage per year (say, 1 or 2 per cent) and should be maintained at a higher rate (say 2 to 4 per cent) if such a rate was achieved in the past. This approach can be justified on the assumption that the improvement experienced by people is more important than their absolute income or other factors. That is, although India's per-capita income is around $60, Ceylon's around $100, and that of some Latin American countries around $250, this level is less significant for development policy than the desire and need for an economy to grow at a rate that will outstrip the population increase and that will not be less than the rate of growth in the past.

The need for outside assistance depends not only on the desirable rate of development, but also on the ability of each country to achieve that rate on its own. Since one is concerned here with a potential, with what a country *could* do, ability is difficult to determine. (If one measures ability in terms of what a country actually does, "need" would lose all meaning. The less a country does, the greater its "need" in that case and the more help it should get.) Ability to achieve a desirable rate of development depends on a number of factors, including per-capita income and the ease with which part of this income can be diverted to development. The higher the per-capita income, the greater the margin above

subsistence and the easier it is to save. These factors are difficult or impossible to measure, and it is even more difficult to evaluate their relative importance. For instance, Burma has a low per-capita national income, but a large international trade sector, easily taxed. The Philippines and the United Arab Republic have higher per-capita incomes but smaller international trade sectors. It is hard to say which of these countries should be better able to meet its own development needs and by how much.

In addition, the ability to raise resources for development depends very much on a country's social structure, administrative competence, political system, values, motivations, and past history. If it is politically possible and desired, most countries can obtain greater resources than they now do from the consumption of high-income groups and from the semi-luxury and luxury expenditures of the mass of the population, and can make additional resources available by mobilizing labor—all without physically unbearable hardship. But if a country can achieve a desirable rate of development without starving anyone, is it "able" to do this even if the government is convinced that it will be overthrown as a consequence?

A quantitative and simple indication of a country's potential ability to contribute the resources to achieve a desirable rate of growth can be derived from its absolute income per head and its past performance. Neither indicator is very satisfactory. Past performance is an especially poor measure of the limits imposed by political, social, and economic circumstances upon a country's ability to raise resources. However, both measures may be the best ones available. When it is possible to compare the resource endowments of different countries with somewhat greater accuracy than seems possible now, this would be a third useful measure of a country's ability to contribute to development.

The need for outside assistance is therefore difficult to judge. While a criterion can be established for a desirable rate of development, the ability to achieve it from indigenous resources is impossible to measure with any accuracy. Closely

related is the second consideration suggested as relevant to the international allocation of resources—*how to use outside assistance to increase, not to substitute for, a country's own development effort.* If it is difficult to establish how large an effort can be expected from a country, it is even more difficult to establish whether outside assistance substitutes for or adds to the effort a country can and ought to make itself.

However, the adequacy of a country's effort in terms of its potential may often be less important to an outside agency than the effect of assistance on the actual development effort the country makes. If, as the result of outside assistance, a country undertakes to increase its own effort, a major purpose of such help is achieved. Changes in the magnitude of a country's development effort cannot be the only guide to the adequacy of this effort, since countries whose resource endowment is favorable and whose initial development effort was small can readily increase it, while others may be so resource-poor or their initial effort may have been so large that any increase is virtually impossible. Thus, although purely historical comparisons seem to be the only ones now readily quantifiable and though they do indicate whether a major purpose of assistance has been achieved, they need to be used with caution. As a criterion in the allocation of international resources they need to be qualified by a judgment on differences in the resource endowment and the adequacy of past efforts of different countries.

The final consideration suggested above was the *relative ability of different countries to use outside assistance.* This is often conceived in terms of physical ability to make effective use of resources from the outside: does a country have a government that will know how to use extension agents or a fertilizer plant provided from outside, or will such help be largely wasted? There is also a broader question. Even if outside resources can be put to good use by two countries, there is likely to be a difference in their relative returns. A fertilizer plant in Iran may give a higher return than if the same plant is built in Kuwait or if the same resources are used to build a dam elsewhere. Similarly with technical assist-

ance—a group of engineers sent to either of two countries may be put to good use, but their relative effectiveness, the returns from their work, almost inevitably will differ.

Allocating resources to countries where they will yield the greatest return has some obvious advantages. The greater the returns from an initial effort, the greater the resources available subsequently to develop other countries. On the other hand, allocating resources according to results is likely to mean an increasing gap between the relatively prosperous and relatively backward. As outside assistance flows to countries better endowed in human or material resources or to those where a substantial development effort has created the necessary environment for further development, they can become still better able to use further assistance, and thus become even better claimants on further help. The gap would not widen if people moved from one country to another to follow better opportunities, but this they cannot and often do not want to do. The gap could also be prevented from widening if, as soon as countries with more productive projects are launched on development, all international resources could go to those countries previously neglected. Such a policy could yield a maximum rate of growth for underdeveloped countries as a whole, but few, if any, countries would be willing to accept a slower initial rate of growth because this is best for all countries or on the understanding that this will be to their benefit some time in the future. This dilemma in the international allocation of resources is very similar to, but more serious than, the problems encountered in allocating resources to regions within a country.

Furthermore, there is a problem of measuring or estimating likely returns or ability to use assistance. Administrative and technical ability to carry out a particular project can be judged with experience, but not measured. The limits and difficulties in measuring economic returns are great when projects in a single country are considered and are aggravated in international comparisons—by problems of exchange rates, incomparability of prices, and difficulties in obtaining

comparable data—to such an extent that for most projects such calculations would serve little practical purpose at present. For technical assistance, such measurements would be subject to all the uncertainties discussed earlier for a single country, but with a greater margin of error when several countries were involved.

Thus, the three considerations mentioned at the beginning of this section do appear to be relevant to allocations of resources among countries. However, they are not unambiguous guides to policy and are likely to be in conflict with one another. Need cannot be measured clearly and is likely to be greatest in those countries least able to show high returns from outside assistance. Usually neither returns nor the third consideration—the extent of a country's own effort—are measurable in a reasonably precise way or against any clear standards. No wonder international allocations of resources are often influenced by some simple "common sense" criteria where they are not entirely determined by political and related considerations.

Possible Criteria

Perhaps one can suggest somewhat less ambiguous practical guidelines. Those outlined below are subject to a number of qualifications and criticisms and they do not take account of all relevant factors. They may be useful, however, as an attempt to express in a systematic and quantifiable form some of these factors. They cannot be used without modification, but perhaps they can be used to provide a basis from which modification can start.

It was argued earlier that the need for outside aid depends partly on the size of a desirable development program and that this can best be defined in relation to a particular rate of growth in per-capita income, which would be identical for all countries. The extent to which a country can achieve the desired program from its own resources can be estimated. Suggestions for doing so were made above and such estimates have been made in practice. Outside agencies could then provide the missing resources, but only to the extent that the

country is making a commensurate effort. To take an example, the desirable rate of growth can be defined as a 2 per-cent per-annum increase in per-capita income for all countries. If the population in a particular country is growing at 2 per cent per year, it should have a 4 per-cent increase in national income. If it is estimated that this country can achieve a 3 per-cent increase from its own resources, outside technical and financial assistance would be equal to one-third of any effort the country actually makes itself, up to the absolute amount required to achieve a 4 per-cent increase in national income. That is, if the country needs to devote $400,000,000 to development in order to achieve the desired 4 per-cent increase, and if it raised $300,000,000 from its own resources, outside assistance would be equal to $100,000,000. If the country devoted only $200,000,000 to development from its own resources, outside assistance would be reduced to $66,000,000 to preserve the three-to-one ratio. Outside assistance would not exceed $100,000,000 in any case. As the country's ability to raise resources increased over time, the share of aid would decline.

This approach would take account of need and would stimulate a maximum effort on the part of the country. It does not take account of differences among countries in the ability to use outside assistance and in the returns to be expected from it. Although it is difficult to estimate such differences with a reasonable degree of accuracy, it would be possible to apply some of the criteria and concepts discussed earlier to a few major projects. If the difference in returns is large enough, this is likely to be significant and cannot be explained merely by crudeness and possible error in estimating returns. In that case, the allocations of outside resources suggested above, which were related to need and to a country's effort, could be modified so that projects with a high rate of return are assisted in one country rather than others with a low rate elsewhere. The procedure outlined would need to be modified further, since it leaves out a number of factors and is not nearly so precise as the figures in the example suggest. However, it could provide a useful first

approximation and approach to the problem of international allocation of resources.

Regional Projects

In addition to allocating assistance to individual countries, outside agencies occasionally provide resources to projects covering more than one country. The same considerations are relevant in both cases, but they are even more difficult to apply and need to be somewhat modified in the case of regional projects.

Regional projects can have some clear advantages over those restricted to a single country. The major one is obviously the possibility of dealing with a problem or taking advantage of a resource that encompasses more than one country. Problems like malaria and resources like river basins often do not stop at political boundaries. In these cases projects limited to a particular country usually involve greater costs or lesser benefits than if they are tackled on a regional basis. Regional projects may also have political and social advantages, since they can increase the opportunities for joint constructive work by nationals and governments of different countries.

There are concomitant disadvantages. The administrative burdens of regional projects are usually greater, since the involvement of more than one government means differences in outlook, policy, and perhaps language and procedure. In addition, while joint efforts can improve relations, they can also exacerbate them, depending on how they are handled and who is concerned.

Conclusions and Future Work

If one excludes the political, military, and other objectives of the donor agencies and countries, three considerations have been suggested here as being relevant for the international allocation of resources:

1) The need for outside assistance. This involves (*a*) establishing a desirable or appropriate rate of development, which can be stated in terms of a specific percentage increase in

per-capita income, and (*b*) the potential ability of a country to contribute to the achievement of this rate, which is reflected to some extent in its absolute level of per-capita income and its past performance in supporting development.

2) A country's own effort with respect to development. This consideration may generally be best satisfied by an examination of whether and to what extent a country increases its development effort with outside assistance.

3) A country's ability to use outside assistance, both in terms of physical capacity and maximum returns for outside resources. The measures discussed earlier for returns on investment and the usefulness of technical assistance can be applied in some cases, but they are less valid in international than in intra-country comparisons.

These three considerations may be in conflict. Need may be greatest in the case of some countries which make the least effort and are likely to show the least return from outside assistance. Allocations to countries making the largest effort and with the highest rate of return will yield the greatest over-all increase in growth, but will often widen the gap between the richest and the poorest countries. The choice between "efficiency" and "equality of income" on a global basis is not likely to be subject to any but value judgments.

It was, however, suggested that the most generally applicable set of guidelines for the international allocation of technical and financial resources might put primary emphasis on need and a country's own effort. The outside agency would stand ready to supply assistance to the extent that the country cannot achieve a uniform desirable rate of growth from its own resources, but only to the degree that the country itself actually provides the resources it is thought capable of raising. Ability to use the assistance, differences in returns, and other factors would in some cases modify the conclusions reached on this basis.

Future progress on the question of the international allocation of resources would require first of all further general and theoretical work. What is needed is some consideration

of the problem, of the possible approaches suggested above, and of other criteria that might be used, rather than the application of existing criteria or the gathering of experience, which were suggested respectively as the first priority in the previous discussions on selecting national development and technical assistance programs.

Who Applies Criteria

IN PRINCIPLE, responsibility for decisions on a development program rests almost exclusively with the country concerned. If suitable indigenous personnel are available they are likely to have more extensive knowledge of the country than foreign technicians have, and an indigenous institution would be more responsive to the wishes of the society. And morally, the responsibility must always be with the indigenous government, regardless of whether or not it uses foreign technicians.

As long as outside resources play a significant role in a development effort, outside agencies will be concerned with the composition of that effort and will have independent views on it. However, if a recipient country has the personnel and institutions to make sound decisions on the composition of a development program, there is no reason why it should not itself determine that composition. The attitude of outside agencies would be a factor to be taken into account, but these agencies need not be brought into basic decision-making. For instance, if a country believes that it can get more assistance for an atomic reactor than for residential housing, this is a fact to be reckoned with in deciding which of the two to include in a development program, but it does not make it necessary to consult outside agencies before deciding.

In actual practice and under current circumstances, however, the answer is not quite so simple. Most countries are not engaged in a carefully thought-out development effort, and many do not have a consistent development program even for the government's part in this effort. Often, the development effort consists of a number of projects and

proposals conceived and carried out by different bodies, with little attention to their relative priority and relationship. Countries which do prepare a development "Plan" frequently do not have the necessary staff and institutions to do as good a job as would be desirable. Under these circumstances technical assistance and more general cooperation with outside agencies can be extremely useful in assisting in decisions on the composition of a development program.

The opportunity to obtain or provide such assistance has often been neglected. Sometimes, the governments concerned have not seen the need for technical assistance in preparing their development programs. In other cases, they have been reluctant to use technical assistance even where they saw a need, since the relevant decisions call for considerable regard for political, social, and personal factors, and many governments prefer not to have foreigners involved in such decisions. In addition, outside agencies have not always seen the importance of assistance in programing or have not been anxious to face the problems involved in this kind of technical assistance.

A third factor also stems from the sensitive nature of some of the decisions involved. Most recipient governments would be reluctant to accept technical assistance on programing or planning problems from another government, and sometimes even from international agencies. A government is justifiably chary of providing an outsider with all the information and opportunity for participation in internal discussion that is necessary if that person is to advise on, say, the priority of a steel mill as compared with an agricultural extension service. This is especially true if the government may then want to approach the donor of the technical assistance, whether government or international agency, for help in carrying out one of the projects discussed. This problem can be avoided, in part, if advisors come from a non-governmental agency that does not provide other assistance, such as private firms, universities, foundations, and some international agencies. These agencies may have other handicaps, however, arising from suspicion of a private firm with fees at stake, from an

unduly academic approach, or from an inability to recruit and provide sufficiently able personnel.

For all these reasons, technical assistance has been applied less often than might be desirable to the problems of programing and planning. Yet an improvement here can yield very substantial returns. If a development program is poorly conceived, outside agencies can do relatively little to correct for this by adjusting the composition of their assistance program. In the first place, an outside agency usually finds it difficult to tell much about the soundness of decisions on the composition of a development program. Even if it has doubts on this score, it generally lacks the time, staff, and information to prepare a suggested alternative development program. Secondly, even where the outside agency has sound reasons for believing that the composition of a country's development program should be changed, it usually lacks the means to bring about much change. It can withhold assistance, although this is very difficult for some agencies and for most others leads to undesirable strains in relations with recipient governments. Even where it can be done, it is usually limited to an attempt to change a few decisions. It is quite rare for a country to change a development program significantly because some outside body presses it to do so. Finally, even where an outside agency can exert sufficient pressure to force a modification in a poorly planned program, it would have been more desirable and efficient to have assisted the country concerned in preparing a better one in the first place.

Cooperation at the preparatory stage can take several forms. First, more assistance to over-all planning bodies is desirable. Substantial improvement in the composition of development programs can take place if such bodies are helped to become more effective. At the same time, technical assistance faces special problems in this field due to reluctance on the part of recipient countries to use it, and the difficulty of outside agencies in providing suitable personnel. Second, both recipient countries and outside agencies have an interest in improving programing techniques. Outside agencies are in

a good position to promote research on programing, and to work with recipient governments on rational standards of programing. Third, outside agencies now provide technical assistance to many bodies concerned with programing at various levels, and the foreign technicians involved should recognize it as their explicit function to cooperate in this programing. Foreign technicians requested for other work may not always be welcome in the role of advisors or helpers on programing problems. But to the extent that outside agencies have any influence on recipient countries, they will usually achieve more by pressing for better preparation of programs than by pressing for changes in these programs once they have been decided on.

While cooperation between the country concerned and outside agencies is highly desirable in determining the composition of a development program, especially at present when most countries lack the necessary national staff to do this work on their own, such cooperation is always essential for a technical assistance program. Outside agencies and recipient countries each have, and will continue to have, special competence with respect to different factors affecting the usefulness of technical assistance. The recipient country should be best able to judge the applicability of technical assistance to various aspects of its development program and its own need for outside assistance. The donor agency is the best judge of its own ability to provide the required assistance. However, none of these issues is the exclusive concern of either recipient or donor, and combined analysis and decision are called for.

As in the case of cooperation on the composition of a development program, a joint effort in programing technical assistance can and should take several forms: cooperation at the national planning level; cooperation in research on and in devising machinery for effective application of programing techniques; and cooperation with ministries and other bodies at all levels in improving programing by fields, parts of fields, and on individual projects. Here again, programing for a particular field should not result primarily in strengthening

its claims on technical assistance resources, but programs in other fields and in the nation as a whole should be kept in mind.

Criteria to help determine the composition of development and technical assistance programs are as yet poorly developed. There is no general agreement on the objectives and strategy of development, which would set the general framework. In addition, much of the information required to frame or apply criteria is lacking. Despite these shortcomings, there are quite sophisticated and detailed criteria for some decisions on the composition of a development program and more general guidelines for others. Their use has lagged substantially behind their conception. In the case of technical assistance programs the criteria are a good deal less refined, but even here some general guidelines can be suggested and some relevant factors pointed out. Yet in many cases, decisions are made on a project-by-project basis and based largely on individual judgment. Criteria are probably least developed for the allocation of resources among countries, partly because inter-country comparisons are especially difficult, partly because political and other factors with a different set of guidelines are more important. Here too, however, criteria or guidelines could help make the evaluation of some of these factors more rational.

The existence of criteria and guidelines, and their limited use in practice, emphasize the importance of increased technical assistance and international cooperation in their application. Future progress in improving cooperation between recipient countries and donor agencies is not primarily a question of research, but a matter of policy decisions and administrative arrangements. Progress in this respect is becoming ever more important and can be more productive as we improve criteria for determining the composition of development and technical assistance programs, and as decisions focus more and more on integrated programs rather than on individual projects.

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